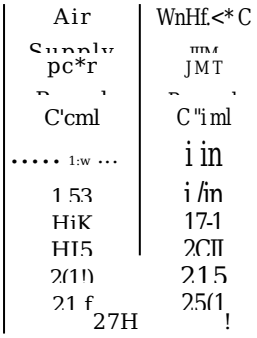
a pressure against the top of the setting proportional to their vertical height and their average temperatures in Ilio same manner asa chimney. The gases in the first pass, being lighter Ifinn those in the second pass, exert more pressure and therefore tend (o foree the gases in the second pass down and under the second Imflle. In the third pass this uplift tends to accelerate the movement of the gases to the smoke flue. The greater the height of I IK* set! in« the greater the upward pressure. These pressures will nntumlly affect the reading of any draft gage attaehod to the boiler. The dynamic pressure due to velocity of flow nuiy have nn additive or subtractive effect on the reading of the dniff. pi^e^depeiidinK upon its location or, more correctly, upon the. lonilion of the* connections to the setting.

In connection with baffles designed ostensibly to inerea.sc Hie velocity of flow of the off gases of combustion Ihe following fable gives the volumetric air supply and the resulting off #iseH from an exceptionally good grade of coal having a very low nsh content.

	Volume at 0° C. und	
	Air Supply Cubic per gram	Waste Gas Cubic per gram
Air supply 100	8.71	9 . 04
" 110	9.58	0.91
' ' 120	10.45	10.78
' ' 140	12.19	12.52
' ' 150	13.06	13.31)
' ' 175	15.24	15 . 57
" 200	17.42	17.75
per cent		



As the composition of the coal varie.s, those* volumes will vary. The coal consumption per boiler horsepower will vnry from two pounds per hour upward and the total amount of roal *hnnml* cm it grate will depend upon the size of the boiler ami (he amount if *in* forced above its nominal rating. As largo HIWH nn* the incwt interesting an 875 horsepower Sterling type* boiler ojrntfed ni several loads will be considered. The volume* inside the net ting J«